

--While the foregoing description and drawings represent the present invention, it will be obvious to those skilled in the art that various changes may be made therein without departing from the true spirit and scope of the present invention.--

IN THE CLAIMS:

Preceding "1." change "Patent Claims" to --What is claimed is:--.

Amend the claims as follows:

1. (amended). [Process] In a process for producing molded bodies with a barrier layer, especially molded bodies for packaging, from biodegradable material using a viscous mass which contains biodegradable fiber material, water, and starch and is baked in a baking mold so as to form a fiber material-starch composite,

[characterized in that] an improvement comprising the steps of:

using a mixture of long and short fibers or fiber bundles with a fiber length or fiber bundle length in the range of 0.5 mm to 50 mm [is used] as fiber material[,] ; and
producing the molded body [is produced] by impregnation with a biodegradable, hydrophobic boundary layer, wherein the boundary layer is formed from cellulose acetate and/or cellulose acetate propionate without softeners.

2. (Amended) [Process] In a process for producing molded bodies with a

barrier layer, especially moldable bodies for packaging, from biodegradable material using a viscous mass which contains biodegradable fiber material and starch and is baked in a baking mold so as to form a fiber material-starch composite, [characterized in that] an improvement comprising the steps of:

using a mixture of long and short fibers or fiber bundles with a fiber length or fiber bundle length in the range of 0.5 mm to 50 mm [is used] as fiber material; and
producing the molded body [is produced] by means of a foil coating formed by applying a foil based on polyester, polyester amide or polylactic acid to the baked molded body so as to form a biodegradable, liquid-tight boundary layer.

3. (Amended) [Process] The process according to claim 2, [characterized in that] including the step of forming the biodegradable boundary layer [is formed] without softeners.

Claim 4, line 1, change "Process" to --The process--; delete "or 3"; change "characterized in that" to --wherein--.

Claim 5, line 1, change "Process" to --The process--; change "characterized in that" to --wherein--.

6. (Amended) [Process] The process according to [at least one of the preceding claims 2 to 4] claim 2, [characterized in that] wherein the foil coating is

carried out by vacuum at sealing or compression heat sealing and/or with heat treatment.

7. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 6] claim 1, [characterized in that] wherein the impregnation or foil coating is elastic and is [preferably] applied directly to the molded body without adhesion promoters.

8. (Amended) [Process] The process according to [at least one of the preceding claims 2 to 4, 6 or 7] claim 2, [characterized in that] wherein the foil is heated at its underside intended for adhesive connection with the molded body.

9. (Amended) [Process] The process according to [at least one of the preceding claims 2 to 4, 6 to 8] claim 2, [characterized in that] wherein the foil is prestretched prior to application to the molded body by means of a male die, especially for hollow molded bodies.

10. (Amended) [Process] The process according to [at least one of the preceding claims 2 to 4, 6 to 9] claim 2, [characterized in that] wherein at least the adhesion surface of the molded body to be coated with foil is preheated prior to coating with foil to the melting temperature of the foil and the foil is then applied thereto.

11. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 10] claim 1, [characterized in that] wherein the hydrophobic boundary layer is formed by impregnation or a liquid-tight barrier layer by applying a foil to the molded body when it is still hot from the preceding baking process and the molded body is conditioned simultaneously or subsequently.

Claim 12, line 1, change "Process" to --The process--; change "at least one of the preceding claims 1 to 11" to --claim 1--.

13. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 12] claim 1, [characterized in that] wherein the molded body is provided with the boundary layer on the inside and/or on the outside.

Claim 14, line 1, change "Process" to --The process--; change "claims 1 to 5, 7, or 11 to 13" to --claim 1--; change "characterized in that" to --wherein--.

Claim 15, line 1, change "Process" to --The process--; change "at least one of the preceding claims 1 to 14" to --claim 1--.

Claim 16, line 1, change "Process" to --The process--; change "15" to --1--; change "characterized in that" to --wherein--.

17. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 16] claim 1, [characterized in that] wherein an inner boundary layer of the molded body has a greater resistance to moisture and/or temperature and/or fats and/or is more tightly sealed against gas and aromas than an outer surface of the molded body, especially an outer surface provided with a hydrophobic boundary layer.

18. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 17] claim 1, [characterized in that] wherein the molded body is provided along an inner surface with a hydrophobic impregnation or coating which is thicker than that on its outer surface.

19. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 18] claim 1, [characterized in that] wherein the molded body is baked in the baking mold, subsequently removed from the baking mold and introduced into a further device within the baking apparatus for applying the hydrophobic impregnation or foil coating.

20. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 19] claim 1, [characterized in that] wherein for subsequent impregnation or coating of the molded body, use is made of process heat of the baking

mold, preferably within the baking mold, or residual heat of the molded article from the preceding baking process to heat the molded body and/or to heat a hydrophobic medium, especially a coating foil, to be applied to the molded body.

21. (Amended) [Process] The process according to [at least one of the preceding claims 1, 5, 7 or 11 to 20] claim 1, [characterized in that] wherein a solution containing cellulose acetate and/or cellulose acetate propionate as hydrophobic substance and a solvent, especially a volatile solvent, is used for impregnation.

22. (Amended) [Process] The process according to [at least one of the preceding claims 2 to 4, 6 to 10] claim 2, [characterized in that] wherein the foil is trimmed at the coated molded body after the molded body is removed from the baking mold in conjunction with a severing of overlapping material resulting from the steam discharge ducts of the baking mold.

23. (Amended) [Process] The process according to [at least one of claims 1 to 23] claim 1, [characterized in that] wherein fiber-containing raw material which is pulped or defibrated in particular by prior comminution is used to form the fiber material.

24. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 23] claim 1, [characterized in that] wherein the fiber-containing

raw material is waste paper, recycled material, especially deinked waste paper, biodegradable fiber material such as production waste containing cellulose fibers, especially wood pulp or paper pulp, beet chips or the like.

25. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 24] claim 1, [characterized in that] wherein the fiber material is formed directly from biodegradable fibers or fiber bundles.

Claim 26, line 1, change "Process" to --The process--; change
"characterized in that" to --wherein--.

27. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 25] claim 1, [characterized in that] wherein the starch used is native starch and/or pregelatinized starch or modified starch.

Claim 28, line 1, change "Process" to --The process--; change
"at least one of the preceding claims 1 to 27" to --claim 1--.

29. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 28] claim 1, [characterized in that] wherein water is added in a ratio of approximately 8:10 [, preferably 2.5:1,] in relation to the dry mass of the fiber-containing raw material, especially waste paper, for forming the viscous mass.

30. (Amended) [Process] The process according to [at least one of the preceding claims 27 to 29] claim 27, [characterized in that] wherein the proportion of pregelatinized starch or modified starch of the total starch in the viscous mass is approximately 20 to 75 percent by weight.

31. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 30] claim 1, [characterized in that] wherein the proportion of starch to water in the viscous mass is approximately 1:10 to 1:1[, preferably 1:3 to 1:2], and water is subsequently added in the form of modified starch or starch which is pregelatinized accompanied by excess water to form the viscous mass.

32. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 31] claim 1, [characterized in that] wherein the portion of fiber material in the viscous mass is 10 percent by weight to 30 percent by weight, the proportion of starch in the viscous mass is 5 percent by weight to 40 percent by weight, and the proportion of water in the viscous mass is 70 percent by weight to 40 percent by weight.

33. (Amended) [Process] The process according to [at least one of the preceding claims 27 to 32] claim 27, [characterized in that] wherein the proportion of pregelatinized starch or modified starch in the viscous mass is 1 percent by weight to 13 percent by weight.

34. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 33] claim 1, [characterized in that] wherein the fiber-containing raw material, especially waste paper, is comminuted and subsequently broken down to its fiber structure in the presence of water and with the addition of starch, [preferably native starch,] and the moldable viscous mass is formed and subsequently baked to form molded bodies.

35. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 33] claim 1, [characterized in that] wherein the fiber-containing raw material, especially waste paper, is comminuted in the presence of water and is subsequently broken down to its fiber structure with the addition of starch [, preferably native starch,] and the moldable viscous mass is formed and subsequently baked to form molded bodies.

36. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 35] claim 1, [characterized in that] wherein the viscous mass is metered prior to baking.

37. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 36] claim 1, [characterized in that] wherein the fiber-containing raw material or the fiber material that is used directly is analyzed with respect to its fiber length and starch proportion and is graded prior to or after the comminuting

process.

38. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 37] claim 1, [characterized in that] wherein the native starch is added in partially already during a comminution of the fiber-containing raw material, specially as a premix with filler materials.

39. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 40] claim 1, [characterized in that] wherein the starch is at least partially added to the fiber-containing raw material[, at least partially,] during the comminuting process and/or during a subsequent drying process or wet mixing process and/or during a subsequent equalizing mixing and kneading process as native starch and/or modified starch and/or pregelatinized starch.

40. (Amended) [Process] The process according to [at least one of the preceding claims 27 to 39] claim 27, [characterized in that] wherein the starch is introduced as pregelatinized starch and as native starch and at least a filler material is added into the native starch prior to adding in the comminuting process of the fiber-containing raw material or in the subsequent equalizing mixing and kneading process.

41. (Amended) [Process] The process according to [at least one of the preceding claims 27 to 40] claim 27 , [characterized in that] wherein the pregelatinized

starch is added directly to the mixing and kneading process for forming the viscous mass.

42. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 41] claim 1, [characterized in that] wherein the formation of the viscous mass is carried out using fiber-containing raw material of different grades of comminution and different fiber lengths.

43. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 42] claim 1, [characterized in that] wherein the mass is heated before introducing it into the baking mold.

44. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 43] claim 1, [characterized in that] wherein the at least two baking plates of the baking mold are locked relative to one another at the beginning of the baking process while ensuring a constant distance between the upper baking plate and lower baking plate during the baking process, wherein the distance between the inner surfaces of the baking plates which face one another and between which the mass is located determines the wall thickness of the baked molded body.

45. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 44] claim 1, [characterized in that] wherein a controlled discharge

of steam from the baking mold is carried out during the baking process.

Claim 46, line 1, change "Process" to --The process--; change
"characterized in that" to --wherein--.

47. (Amended) [Process] The process according to [at least one of the preceding claims 1 to 46] claim 1, [characterized in that] wherein long fibers or long fiber bundles with a length of up to 50 mm are [preferably] used for thick-walled and/or large-area molded bodies, especially fibers or fiber bundles with a fiber length or fiber bundle length in the range of 10 mm to 50 mm in a mixture with short fibers or short fiber bundles with a fiber length or fiber bundle length of 0.5 mm to 20 mm.

48. (Amended) [Process] [Molded] A molded body, especially a molded body for packaging, made from biodegradable material, comprising:
biodegradable fiber material, starch and a residual proportion of water, especially produced in accordance with [the] a process [according to at least one of the preceding claims 1 to 47] for producing molded bodies with a barrier layer, especially molded bodies for packaging, from biodegradable material using a viscous mass which contains biodegradable fiber material, water, and starch and is baked in a baking mold so as to form a fiber material-starch composite, said process comprising the steps of using a mixture of long and short fibers or fiber bundles with a fiber length or fiber bundle length in the range of 0.5 mm to 50 mm as fiber material and producing the

molded body by impregnation with a biodegradable, hydrophobic boundary layer,
wherein th boundary layer is form d from cellulose acetate and/or cellulose ac tate
propionate without softeners; [, characterized in that the]

said molded body [has] having:

a mixture of long and short fibers or fiber bundles with a fiber length or fiber bundle length of 0.5 mm to 50 mm, and [has] having, on at least one side, a biodegradable hydrophobic boundary layer which is formed based on cellulose acetat or cellulose acetate propionate without softeners or has a coating foil based on polyester, polyester amide or polylactic acid.

Claim 49, line 1, change "Molded" to --The molded--; change
"characterized in that" to --wherein--.

Claim 50, line 1, change "Molded" to --The molded--; change
"characterized in that" to --wherein--;
line 2, delete "preferably".

51. (Amended) [Molded] The molded body according to [at least one of the preceding claims 48 to 50] claim 48, [characterized in that] wherein the proportion of fiber material to starch is 4:1 to 1:4.

52. (Amended) [Molded] The molded body according to [at least one of the

preceding claims 48 to 51] claim 48, [characterized in that] wh rein the molded body contains a proportion of pregelatinized starch or modified starch.

53. (Amended) [Molded] The molded body according to [at least one of the preceding claims 48 to 51] claim 48, [characterized in that] wherein the molded body contains a mixture of, in particular, long, loosened fiber bundles and, in particular, short individual fibers or fiber bundles.

Add new claims 54-96 reading as follows:

--54. The process according to claim 1, wherein the impregnation or foil coating is elastic and is applied directly to the molded body without adhesion promoters.

55. The process according to claim 1, wherein the hydrophobic boundary layer is formed by impregnation or a liquid-tight barrier layer by applying a foil to the molded body when it is still hot from the preceding baking process and the molded body is conditioned simultaneously or subsequently.

56. The process according to claim 1, wherein a thickness of the hydrophobic, biodegradable boundary layer is 5 µm to 200 µm.

57. The process according to claim 1, wherein the molded body is provided with the boundary layer on the inside and/or on the outside.

58. The process according to claim 1, wherein the impregnation is applied as a multiple layer.

59. The process according to claim 1, wherein the boundary layer serving as barrier layer has a barrier effect against liquids, especially water, acidic foodstuffs and fats.

60. The process according to claim 1, wherein an inner boundary layer of the molded body has a greater resistance to moisture and/or temperature and/or fats and/or is more tightly sealed against gas and aromas than an outer surface of the molded body, especially an outer surface provided with a hydrophobic boundary layer.

61. The process according to claim 1, wherein the molded body is provided along an inner surface with a hydrophobic impregnation or coating which is thicker than that on its outer surface.

62. The process according to claim 1, wherein the molded body is baked in the baking mold, subsequently removed from the baking mold and introduced into a further device within the baking apparatus for applying the hydrophobic impregnation or foil

coating.

63. The process according to claim 1, wherein for subsequent impregnation or coating of the molded body, use is made of process heat of the baking mold, preferably within the baking mold, or residual heat of the molded article from the preceding baking process to heat the molded body and/or to heat a hydrophobic medium, especially a coating foil, to be applied to the molded body.

64. The process according to claim 1, wherein fiber-containing raw material which is pulped or defibrated in particular by prior comminution is used to form the fiber material.

65. The process according to claim 1, wherein the fiber-containing raw material is waste paper, recycled material, especially deinked waste paper, biodegradable fiber material such as production waste containing cellulose fibers, especially wood pulp or paper pulp, beet chips or the like.

66. The process according to claim 1, wherein the fiber material is formed directly from biodegradable fibers or fiber bundles.

67. The process according to claim 1, wherein the starch used is native starch and/or pregelatinized starch or modified starch.

68. The process according to claim 1, wherein the ratio of starch to fiber material in the viscous mass is in the range from 15 percent by weight to 400 percent by weight in relation to the dry weight of the fiber-containing raw material, especially waste paper.

69. The process according to claim 1, wherein water is added in a ratio of approximately 8:10 in relation to the dry mass of the fiber-containing raw material, especially waste paper, for forming the viscous mass.

70. The process according to claim 1, wherein the proportion of starch to water in the viscous mass is approximately 1:10 to 1:1 and water is subsequently added in the form of modified starch or starch which is pregelatinized accompanied by excess water to form the viscous mass.

71. The process according to claim 1, wherein the portion of fiber material in the viscous mass is 10 percent by weight to 30 percent by weight, the proportion of starch in the viscous mass is 5 percent by weight to 40 percent by weight, and the proportion of water in the viscous mass is 70 percent by weight to 40 percent by weight.

72. The process according to claim 1, wherein the fiber-containing raw material, especially waste paper, is comminuted and subsequently broken down to its

fiber structure in the presence of water and with the addition of starch, and the moldable viscous mass is formed and subsequently baked to form molded bodies.

73. The process according to claim 1, wherein the fiber-containing raw material, especially waste paper, is comminuted in the presence of water and is subsequently broken down to its fiber structure with the addition of starch and the moldable viscous mass is formed and subsequently baked to form molded bodies.

74. The process according to claim 1, wherein the viscous mass is metered prior to baking.

75. The process according to claim 1, wherein the fiber-containing raw material or the fiber material that is used directly is analyzed with respect to its fiber length and starch proportion and is graded prior to or after the comminuting process.

76. The process according to claim 1, wherein the native starch is added in partially already during a comminution of the fiber-containing raw material, especially as a premix with filler materials.

77. The process according to claim 1, wherein the starch is at least partially added to the fiber-containing raw material during the comminuting process and/or during a subsequent drying process or wet mixing process and/or during a subsequent

equalizing mixing and kneading process as native starch and/or modified starch and/or pregelatinized starch.

78. The process according to claim 1, wherein the formation of the viscous mass is carried out using fiber-containing raw material of different grades of comminution and different fiber lengths.

79. The process according to claim 1, wherein the mass is heated before introducing it into the baking mold.

80. The process according to claim 1, wherein the at least two baking plates of the baking mold are locked relative to one another at the beginning of the baking process while ensuring a constant distance between the upper baking plate and lower baking plate during the baking process, wherein the distance between the inner surfaces of the baking plates which face one another and between which the mass is located determines the wall thickness of the baked molded body.

81. The process according to claim 1, wherein a controlled discharge of steam from the baking mold is carried out during the baking process.

82. The process according to claim 1, wherein long fibers or long fiber bundles with a length of up to 50 mm are used for thick-walled and/or large-area

molded bodies, especially fibers or fiber bundles with a fiber length or fiber bundle length in the range of 10 mm to 50 mm in a mixture with short fibers or short fiber bundles with a fiber length or fiber bundle length of 0.5 mm to 20 mm.

83. The process according to claim 1, wherein water is added in a ratio of approximately 2.5:1 in relation to the dry mass of the fiber-containing raw material, especially waste paper, for forming the viscous mass.

84. The process according to claim 1, wherein the proportion of starch to water in the viscous mass is approximately 1:3 to 1:2, and water is subsequently added in the form of modified starch or starch which is pregelatinized accompanied by excess water to form the viscous mass.

85. The process according to claim 1, wherein the fiber-containing raw material, especially waste paper, is comminuted and subsequently broken down to its fiber structure in the presence of water and with the addition of native starch and the moldable viscous mass is formed and subsequently baked to form molded bodies.

86. The process according to claim 1, wherein the fiber-containing raw material, especially waste paper, is comminuted in the presence of water and is subsequently broken down to its fiber structure with the addition of native starch and the moldable viscous mass is formed and subsequently baked to form molded bodies.

87. The process according to claim 2, wherein water is added in a ratio of approximately 2.5:1 in relation to the dry mass of the fiber-containing raw material, especially waste paper, for forming the viscous mass.

88. The process according to claim 2, wherein the proportion of starch to water in the viscous mass is approximately 1:3 to 1:2, and water is subsequently added in the form of modified starch or starch which is pregelatinized accompanied by excess water to form the viscous mass.

89. The process according to claim 2, wherein the fiber-containing raw material, especially waste paper, is comminuted and subsequently broken down to its fiber structure in the presence of water and with the addition of native starch and the moldable viscous mass is formed and subsequently baked to form molded bodies.

90. The process according to claim 2, wherein the fiber-containing raw material, especially waste paper, is comminuted in the presence of water and is subsequently broken down to its fiber structure with the addition of native starch and the moldable viscous mass is formed and subsequently baked to form molded bodies.

91. A molded body, especially a molded body for packaging, made from biodegradable material, comprising:

biodegradable fiber material, starch and a residual proportion of water, especially produced in accordance with a process for producing molded bodies with a barrier layer, especially molded bodies for packaging, from biodegradable material using a viscous mass which contains biodegradable fiber material and starch and is baked in a baking mold so as to form a fiber material-starch composite, said process comprising the steps of using a mixture of long and short fibers or fiber bundles with a fiber length or fiber bundle length in the range of 0.5 mm to 50 mm as fiber material and producing the molded body by means of a foil coating formed by applying a foil based on polyester, polyester amide or polylactic acid to the baked molded body so as to form a biodegradable, liquid-tight boundary layer;

said molded body having:

a mixture of long and short fibers or fiber bundles with a fiber length or fiber bundle length of 0.5 mm to 50 mm, and having on at least one side, a biodegradable hydrophobic boundary layer which is formed based on cellulose acetate or cellulose acetate propionate without softeners or has a coating foil based on polyester, polyester amide or polylactic acid.

92. The molded body according to claim 91, wherein the molded body is covered on all sides.

93. The molded body according to claim 92, wherein long fibers or long fiber bundles with a length of up to 50 mm are used for thick-walled and/or large-area